

Public Pre-Submittal Meeting Between Exelon and NRC

November 14, 2016

Overview of Part 37 & 73

- Part 37
 - Physical Protection of Category 1 and Category 2 Quantities of Radioactive Material
- Part 73
 - Physical Protection of Plants and Materials

Category 1 and 2

- Category 1 quantities of radioactive material have been called radioactive material in quantities of concern (RAMQC).
- Category 1 and Category 2 quantities of radioactive material have been called risk-significant radioactive material and refer specifically to 16 radioactive materials (14 single radionuclides and 2 combinations).
- These materials are: Americium-241; americium-241/beryllium; californium-252; curium-244; cobalt-60; cesium-137; gadolinium-153; iridium-192; plutonium-238; plutonium-239/beryllium; promethium-147; radium-226; selenium-75; strontium-90 (yttrium-90); thulium-170; and ytterbium-169.

Part 37

- Any licensee's NRC-licensed activities are exempt from the requirements of subparts B and C of this part to the extent that its activities are included in a security plan required by Part 73 of this chapter.
- A licensee that possesses radioactive waste that contains Category 1 or Category 2 quantities of radioactive material is exempt from the requirements of subparts B, C, and D of this part.
- Except that any radioactive waste that contains discrete sources, ion-exchange resins, or activated material that weighs less than 2,000 kg (4,409 lbs) is not exempt from the requirements of this part.

Part 37

- Each licensee that possesses an aggregated Category 1 or Category 2 quantity of radioactive material shall establish, implement, and maintain a security program in accordance with the requirements of this subpart.

Part 37

- Each licensee shall establish, implement, and maintain a security program that is designed to monitor and, without delay, detect, assess, and respond to an actual or attempted unauthorized access to Category 1 or Category 2 quantities of radioactive material.

Part 37

- Each licensee identified in § 37.41(a) shall develop a written security plan specific to its facilities and operations.
- The purpose of the security plan is to establish the licensee's overall security strategy to ensure the integrated and effective functioning of the security program required by this subpart.

Part 37

- Licensees shall ensure that all aggregated Category 1 and Category 2 quantities of radioactive material are used or stored within licensee-established security zones.
- Security zones may be permanent or temporary.

Part 37

- Licensees shall establish and maintain the capability to continuously monitor and detect without delay all unauthorized entries into its security zones.
- Licensees shall provide the means to maintain continuous monitoring and detection capability in the event of a loss of the primary power source, or provide for an alarm and response in the event of a loss of this capability to continuously monitor and detect unauthorized entries.

Part 73

- This part prescribes requirements for the establishment and maintenance of a physical protection system which will have capabilities for the protection of special nuclear material at fixed sites and in transit and of plants in which special nuclear material is used.
- The following design basis threats, where referenced in ensuing sections of this part, shall be used to design safeguards systems to protect against acts of radiological sabotage and to prevent the theft or diversion of special nuclear material.

Part 73

- Each licensee shall provide physical protection at a fixed site, or contiguous sites where licensed activities are conducted, against radiological sabotage, or against theft of special nuclear material, or against both, in accordance with the applicable sections of this Part for each specific class of facility or material license.
- If applicable, the licensee shall establish and maintain physical security in accordance with security plans approved by the Nuclear Regulatory Commission.

Part 73

- To meet the general performance requirements of § 73.20 a fixed site physical protection system shall include the performance capabilities described in paragraphs (b) through (g) of this section unless otherwise authorized by the Commission.

Part 73

- Prevent unauthorized access of persons, vehicles and materials into material access areas and vital areas.
- Permit only authorized placement and movement of strategic special nuclear material within material access areas.

Part 73

- Provide for authorized access and assure detection of and response to unauthorized penetrations of the protected area to satisfy the general performance objective and requirements of § 73.20(a).
- Each physical protection program shall provide a response capability to assure that the five capabilities described in paragraphs (b) through (f) of this section are achieved and that adversary forces will be engaged and impeded until offsite assistance forces arrive.

Part 73

- The physical protection requirements of this section apply to each licensee that stores spent nuclear fuel and high-level radioactive waste pursuant to paragraphs (a)(1)(i), (ii), and (2) of this section.
- Spent nuclear fuel and high-level radioactive waste stored under a specific license issued pursuant to part 72 of this chapter at an independent spent fuel storage installation (ISFSI).

Part 73

- Each licensee subject to this section shall establish and maintain a physical protection system with the objective of providing high assurance that activities involving spent nuclear fuel and high level radioactive waste do not constitute an unreasonable risk to public health and safety.

Part 73

- Each licensee subject to this section shall meet the following performance capabilities.
- Store spent nuclear fuel and high level radioactive waste only within a protected area;
- Grant access to the protected area only to individuals who are authorized to enter the protected area;
- Detect and assess unauthorized penetration of, or activities within the protected area.

Part 73

- The security plans must identify, describe, and account for site-specific conditions that affect the licensee's capability to satisfy the requirements of this section.
- The licensee is responsible for maintaining the onsite physical protection program in accordance with Commission regulations through the implementation of security plans and written security implementing procedures.

Part 37 vs. Part 73

- Over 65% of power reactor sites will have large equipment weighing in excess of 2000 kg (e.g., steam generators, reactor heads, contaminated turbine equipment, etc.) housed outside their Protected Areas, but within the Owner Controlled Area. These materials are self-protecting and should be exempt from the requirements of Part 37 .
- NRC issued an Enforcement Guidance Memorandum (EGM), 2014-001, on March 13, 2014 (ML14056A151).

Part 37 vs. Part 73

- If a licensee's Part 73 protected area excludes the reactor building or auxiliary building, which contain radioactive materials, then the licensee must meet the requirements of Part 37.
- If two physical barriers exist separating radioactive materials, then the material is not subject to aggregation requirements.

Part 37 vs. Part 73

- Once the licensee has begun active decommissioning and is dismantling the facility, Part 37 would apply to rubble and removed components.
- Large volumes of diffuse concentrations may also not be subject to aggregation requirements due to the physical barriers inherent in the physical form of diffuse waste, depending upon the particular configuration.